Minnesota Studies in Vocational Rehabilitation:

IX. The Application of Research Results

Rene V. Dawis, George W. England, and Lloyd H. Lofquist

with the assistance of

Vera Myers Schletzer and Carroll I. Stein

Copyright 1959 by the University of Minnesota
Preface

The Vocational Rehabilitation Research Laboratory at the University of Minnesota Industrial Relations Center has conducted a series of research studies in cooperation with the Office of Vocational Rehabilitation, Department of Health, Education, and Welfare, during the past two years. These studies have been reported in the IRC bulletin series, "Minnesota Studies in Vocational Rehabilitation." The present bulletin summarizes the results and implications from the first two years of research.

This period of research activity has provided background information for a new five year project concerned with the general area of work adjustment and vocational rehabilitation outcome criteria. The need to identify criteria for measuring effectiveness of rehabilitation counseling and to relate these criteria to counseling practices have become more and more apparent to our staff as each study was completed. We are convinced that this area of investigation holds the most promise for significant contributions to improved counseling techniques and effective state agency operations.

Major reports of progress stemming from the current five year research effort will be published as additional bulletins in this series. As principal investigators, it is a pleasure to acknowledge our sincere appreciation to the Office of Vocational Rehabilitation for their generous support of our research activities.

George W. England
Lloyd H. Lorquist
The Application of Research Results

Introduction

During the past two years, the Industrial Relations Center has undertaken a series of studies dealing with the general problem of employment of physically handicapped persons. Specifically, two major problems have given focus to these exploratory studies: (a) determining the extent and magnitude of employment problems of physically handicapped persons, and (b) studying job placement procedures with the physically handicapped.

The first major problem was investigated primarily through a statewide survey of physically handicapped persons in Minnesota, and an analysis of the survey data. In connection with the second major problem, studies have been conducted on criteria of placement success, on characteristics of physically handicapped persons served by the Division of Vocational Rehabilitation (DVR) and the State Employment Service (ES), on the outcomes of such services, and on referral-information preferences of counselors and placement personnel. Other supporting studies include methodological investigations and a survey of pertinent literature. These studies have been reported in the previous eight bulletins of the present series: Minnesota Studies in Vocational Rehabilitation.

Each of the above-mentioned studies, while specific in scope and therefore suggesting limited implications, has contributed to a growing body of empirical data. With each new contribution, the data pool has assumed new and larger significance. The data pool has grown to the point where the research staff feels that an attempt to derive and formulate the various implications of the data would be worth-while. This bulletin presents the results of such an attempt.

The "pay-off" for the research reported in the present series lies in its impact on practice. Accordingly, the first part of this bulletin details the significance of IRC vocational rehabilitation research for the practitioner, in particular, the administrator, the counselor, and the placement worker. The last part of the bulletin summarizes several technical considerations of particular interest to the research worker in the field of vocational rehabilitation.

---

1 This study was supported, in part, by a research Special Project grant from the Office of Vocational Rehabilitation, Department of Health, Education, and Welfare.
It should be noted at this point that the implications listed below have specific relevance to vocational rehabilitation in Minneapolis and St. Paul, and in several instances, to the state of Minnesota. Data have not been obtained from other geographic areas. This methodological limitation notwithstanding, there is reason to believe that these implications have wider applicability, in part due to the possibility of similar conditions existing in other areas, but mainly because of the nature of the questions raised.
Implications for Administrators

1. The large discrepancy between the number of physically handicapped persons identified in the general population through the 1958 state-wide survey and the number of physically handicapped persons rehabilitated by the state agency highlights the urgency of expanding and improving vocational rehabilitation services. The number alone of physically handicapped persons in the state who are unemployed and actively seeking employment was estimated at 22,000. Comparison of this figure with the approximately 1,000 persons rehabilitated by the state agency each year is sufficient to indicate the magnitude of the vocational rehabilitation problem.

2. Comparison of the 1958 survey data and data on the state agency's rehabilitant population indicates some discrepancies in the distribution of services under the present program. The state agency has tended to concentrate services on some groups to the possible detriment of other groups. The older age groups, the rural handicapped, the "blue-collar" occupational groups, and those with cardiovascular and generalized or systemic disabilities do not receive services commensurate with their numbers relative to other groups in the total physically handicapped population.

3. If the present concentration of services on young disabled persons is based on the premise that these individuals have the best prognosis for early rehabilitation to employment, this policy needs reviewing in the light of evidence tending to question the premise. Findings indicate: (a) that the middle age groups (30 to 45 years), not the younger age groups, have the best prognosis for employment (Bulletin VII); (b) that handicapped persons with some employment experience have better prospects in the labor market than individuals with no employment experience (Bulletin VII); (c) that the younger rehabilitant groups and groups with no employment experience tend to spend longer periods in rehabilitation in comparison with older rehabilitant groups and those with substantial work experience (Bulletin IV). Total number rehabilitated could be maintained, and probably increased, if a younger age group continued to receive the longer rehabilitation services now required but were balanced by increased case finding and work with the middle age group.

4. If the present concentration on younger people is based on need for vocational rehabilitation services (on the assumption that older handicapped persons are better able to compete in the labor market), survey findings were quite clear in indicating that, in all probability, the one group in most need of vocational rehabilitation services is the older age group (age 45 and older), especially those disabled after age 45. Perhaps too large
a proportion of cases served under the present program are actually "habilitation" and too few "rehabilitation." Both groups have important needs, but better balance agewise is indicated even within the limitations of present budget and staff.

5. Survey and follow-up study findings indicate that a large number of physically handicapped persons are not aware of existing services for which they may be eligible. This is especially true for the groups which do not seem to receive their proper share of vocational rehabilitation services, i.e., the older age groups, the rural handicapped, those in "blue-collar" occupations, and those with cardiovascular and generalized or systemic disabilities. Improvement and expansion of selected public information facilities is strongly indicated.

6. Data presented in Bulletin IV on the large differences in length of rehabilitation periods among rehabilitants grouped by age, disability, previous employment history and other characteristics at acceptance raise a number of questions for the administrator.

(a) Do these differences indicate the desirability of more training for counselors, or, as another alternative, specialization among counselors? If counselors serve a wide range of cases, training (pre-service and in-service) should include information on these differences and consideration of possible reasons for such differences. Such training is necessary if adequate services are to be extended to as wide a range of physically handicapped individuals as possible.

(b) How do these differences reflect on present policy which seems to place a premium on the number of closures made? Is there any indication from these data that counselors are being indirectly encouraged to work more intensively with individuals for whom prognosis for closure is better? How much of the longer rehabilitation periods for some groups might be due to their relatively poorer prognosis for closure? (For example, mentally retarded counselees spent an average of 33 months in rehabilitation, with or without training. In contrast, individuals with tuberculosis spent an average of 19 months in rehabilitation with training and 6 months without training. Is there some tendency for counselors to "mark time" with mentally retarded counselees?)

(c) Can these data (on differences in length of rehabilitation periods) be used to help determine optimal case loads? Perhaps counselors who work with groups which spend short periods of time in rehabilitation should have smaller case loads at any given time but should be expected to have a larger yearly case load, in comparison with counselors who work
with groups which spend longer periods of time in rehabilitation. On the other hand, since case load management is considered by supervisors to be an important area, and since counselor effectiveness is judged to some extent by number of rehabilitations, one might achieve more equalization in counselor case loads and a more accurate basis for evaluating counselors, over a period of several months, if cases could be assigned, at least partially, on the basis of expected lengths of rehabilitation period.

(d) Can these data be utilized in initiating an objective procedure for evaluating counselors in which counselee differences are taken into consideration? Development of an "index of rehabilitation case" as suggested in Bulletin IV might serve as a starting point. Thus, counselors with relatively "easier" cases can be appropriately compared with counselors who serve the more difficult cases, or serious attempts can be made to equalize counselor case loads in terms of anticipated case of rehabilitation.

7. The variety of findings reported in Bulletin IV argues for the careful development of record keeping procedures and forms to serve a number of administrative functions, such as planning, staffing, coordinating, and evaluating.

8. One specific implication of Bulletin IV concerns the personal data sheet (or personal history form) on counselees. The finding that rehabilitation outcomes are highly predictable from personal characteristics and other personal history items on counselees suggests that much could be gained from the careful development of a more complete counselee personal data and personal history form.

9. Information on relationships between counselee characteristics and rehabilitation outcomes could be included in counselor manuals, orientation programs for new counselors, and in in-service training, to help structure counselor expectations concerning the performance of his job. The provision of simple "recipes" to be mechanically applied by the counselor is not suggested. But the provision of base-rate information should help counselors to structure more realistically their expectancies for particular individual counselees.

10. The small cost of a follow-up study relative to the amount of information obtained (as demonstrated in Bulletin III) indicates the feasibility of this technique as another procedure for evaluating the rehabilitation program. With increasing progress in rehabilitation and in the behavioral sciences, it seems likely that, in the not-too-distant future, rehabilitation will not be able to rest its case for effectiveness simply on numbers of cases closed-rehabilitated. Careful follow-up studies evaluating outcomes in terms
of work-adjustment criteria, and demonstrating that rehabilitation procedures—not time alone—facilitate adjustment of the handicapped, will be necessary.

11. The finding that rehabilitation counselors and placement personnel do not differ to any appreciable extent in the values they attach to different kinds of referral information, in spite of widespread belief to the contrary, has bearing on the general problem of communication and cooperation among the various groups of professional workers concerned with the vocational rehabilitation of physically handicapped individuals. This finding suggests that many problems experienced in referrals from vocational rehabilitation counselors to Employment Service placement personnel result not from different values being attached to certain kinds of information but from a failure to communicate the information which both groups consider important to the successful placement of the physically handicapped. Realization of similar values by personnel in both agencies may also increase inter-agency communication and participation in the rehabilitation process. It would be interesting and possibly of real importance to conduct similar communication studies in other states and also with other groups of professional workers concerned with vocational rehabilitation, as, for example, between medical personnel and counselors, between counselors and social case workers.\(^7\)

12. Differences in the physically handicapped population served by DVR and ES, as detailed in Bulletin VIII, indicate that some difficulty might be encountered in the implementation of the Vocational Rehabilitation Amendments of 1954 (Public Law 565) which recommends that the State DVR make maximum use of the employment counseling, job placement, and other programs of the Employment Service. However, the data in Bulletin VIII also indicate the groups of physically handicapped persons who have received services from both DVR and ES. Careful study of such data should serve as a logical first step in the development of cooperative relationships between the two agencies. Inter-agency cooperation over the broad range of rehabilitation-placement problems, instead of the establishment of separate agency domains of operation, might avoid unnecessary duplication of effort and might better utilize the unique resources of the two agencies.

\(^7\) Readers concerned with the general problem of relationships between counselors and other professional groups will be interested in studies of occupational prestige hierarchies involving counselors, which were conducted at the University of Minnesota under the direction of Professor Donald G. Paterson. Two of these studies are reported in the following unpublished Ph.D. theses: Graeger, S. G., The hierarchy among occupations in psychology, 1938; Kiland, J. R., Occupational prestige in two Veteran's Administration Hospitals, 1939.
THE APPLICATION OF RESEARCH RESULTS

13. The usefulness to administrators of research of the type reported in previous bulletins of the present series has been indicated to some extent in the several implications outlined above. This is argument for the maintenance of a research section within the agency, especially when it is considered that such research undertakings are extremely feasible with relatively small staffs of two or three persons, provided that competent personnel are selected. The value of such an agency research activity appears to be demonstrated by the many implications of IRC research detailed in this bulletin series.
Implications for Counselors

1. A survey of the literature (Bulletin I) reveals a paucity of research on the evaluation of the effectiveness of vocational rehabilitation counseling. Little attention has been given to the study of counseling outcomes. Studies that have been reported have been limited mainly to gross criteria such as employment-unemployment and earning capacity vs. no earning capacity. Such criteria as permanency of employment, job satisfaction, utilization of aptitudes and capacities, and employer satisfaction have been largely neglected. From the viewpoint of developing professional standards and effective practices, the evaluation of counseling effectiveness through studies on counseling outcomes should be of prime concern to vocational rehabilitation counselors. It is difficult to understand how so many professional counselors can continue to work with counselees with little or no apparent concern about the effectiveness of the procedures they use.

2. The close relationship found between counselee characteristics at acceptance and measures of rehabilitation progress and counseling outcomes (Bulletin IV) suggest certain implications of interest to vocational rehabilitation counselors. For example, this finding might reflect severe limitations on possible outcomes traceable to the actual criteria being used by counselors in determining initial suitability for rehabilitation. It might reflect a certain amount of stereotypy in the counseling or rehabilitation process. It might indicate the limits of effectiveness of current procedures for different groups of counselees (i.e., different disability groups, different age groups, etc.). Implications such as these underscore the value of periodic analysis of case records as a tool for counselors to use in the evaluation of the total counseling and rehabilitation process or of specific parts of the process.

3. Relationships between counselee characteristics at acceptance and length of rehabilitation period (Bulletin IV) suggest a means whereby counselors can make estimates of the rate of progress in rehabilitation for individual counselees. Such estimates would assist counselors in allocating their time and resources to maximum advantage. Furthermore, these relationships (between counselee characteristics and length of rehabilitation period) furnish the counselor with a “base line” against which to compare the results of using new or different techniques or procedures.

4. Findings concerning the relationship of personal characteristics and family information to rehabilitation progress and outcomes (Bulletin IV), and to labor market participation and employment success (Bulletin VII) emphasize the importance of personal factors which are unaffected by the
counseling process but which influence counseling outcomes to a significant degree. These findings indicate, to some extent, the limits within which counseling can effectively operate, and should help the counselor to appraise possible outcomes realistically.

5. Family information (marital status, number of dependents) was found to be a good indicator of rehabilitation progress (Bulletin IV) and employment success (Bulletin VII). However, in the referral information study (Bulletin II), counselors ranked marital and family information low on the scale of importance for placement success. This is an example of an assumption that does not seem to be supported by empirical evidence. It behooves the counselor to recognize his "working assumptions" and "rules of thumb" and to put these to the empirical test.

6. Former DVR counselees interviewed in the follow-up study of placement success (Bulletin III) advanced several unfavorable comments on the interpersonal relationship between counselor and counselee. The same study found three-fifths of former counselees reporting "no job planning" undertaken with counselors. Implications concerning counseling techniques are quite obvious. It is important for counselors to be informed of deficiencies in technique as perceived by their counselees, whether or not there seems to be factual basis for such counselee perceptions. Follow-up studies should be of great value in obtaining this type of information.

7. Data on job-finding by 1,637 DVR counselees (Bulletin IV) raise some important questions of concern to counselors: (a) Is placement a proper responsibility of counselors? (Counselors placed 11% of the total counselee group studied.) (b) Under what conditions should a counselor undertake actual job placement? (Placement by counselors ranged from 3% of the group with loss or absence of upper extremity to 36% of the deaf group with speech impairment.) (c) What is the basis for the relative lack of participation by ES in the placement of DVR counselees? (ES placed only 6% of the total group.) (d) What is the most effective arrangement between ES and DVR with regard to the placement of DVR counselees?

8. There is a high degree of agreement between vocational rehabilitation counselors and placement personnel concerning types of information which should be included in the referral of a handicapped person for placement (Bulletin II). This finding indicates the desirability of including certain important data on all referrals for placement. A standardized form for communicating the essential referral information considered important by both groups should aid in making the referral process more effective.
9. There is strong preference by both vocational rehabilitation counselors and placement personnel for the transmission of referral-placement data in an interpreted form (Bulletin II). Problems of how to interpret counseling data for use in referral should receive attention in both the formal and the in-service training of vocational rehabilitation counselors.

10. Results of the referral-information study (Bulletin II) have some bearing on the problem of communication between vocational rehabilitation counselors and other groups of rehabilitation personnel, such as medical personnel, social case workers, and personnel involved in the training of handicapped individuals. Prior to the (referral-information) study, it was the opinion of many counselors and placement personnel that both groups differed in the importance they attached to certain kinds of referral information. The study served to clarify this particular misconception. In a similar manner, working relationships between counselors and other groups of rehabilitation personnel might benefit from communication studies similar to the counselor-placement personnel referral-information study.

11. The referral-information study shows that only 62% of the counselors would include information on test results “often” in referrals for placement (where “often” is defined as “two-thirds (2/3) or more of all referrals”). This finding might reflect current practice and/or counselor value judgments concerning the utility and utilization of psychological tests in the placement of handicapped individuals. Assuming that the finding reflects counselor practice (i.e., a limited use of psychological test results), it would become important to inquire into the reasons for such practice, in the light of what is known about the utility of psychological tests. If the finding reflects counselor values (i.e., a judgment that psychological test results are of limited value), it would be interesting to determine the basis for such a judgment. In a particular agency, routine tabulation of test usage by counselor and type of disability should help to point up in-service training needs in this area.

12. The 72 counselors responding to the referral-information questionnaire (Bulletin II) referred to their jobs by 36 different job titles. Perhaps a study of vocational rehabilitation counseling jobs is in order.

---

Implications for Placement Workers

In addition to the implications mentioned above that pertain to placement workers, the following implications of IRC vocational rehabilitation research for placement workers may be mentioned:

1. The survey estimate of 22,000 physically handicapped persons of labor force age in the state who were unemployed and actively seeking work (Bulletin VI) delineates, for the placement worker, the magnitude of the placement problem for physically handicapped individuals. Comparison of the above figure with the approximately 5,500 placements of physically handicapped applicants effected by the State Employment Service (ES) in 1957 underscores the need for expanded and improved placement services for the physically handicapped. The placement problem assumes even graver proportions when it is considered that more than two-thirds of the non-employed physically handicapped persons of labor force age were not actively seeking employment (Bulletin VII).

2. The ES plays a relatively small role in the placement of counselees rehabilitated by DVR. (Bulletin IV shows that only 6% of DVR counselees found jobs through ES.) It is an anomalous situation when the extensive placement resources of ES, i.e., its knowledge of the labor market, of jobs and occupations, its experienced placement personnel, are not utilized to full advantage in attacking the problem of finding employment for handicapped persons.

3. The low proportion (16%) of applications at ES by physically handicapped individuals which ultimately results in job placement (Bulletin VIII) reflects unfavorably on the efficacy of placement services now available to handicapped persons. With prospects for placement being so poor, it is not surprising that a large number of physically handicapped individuals stay out of the labor market.

4. There is some evidence that the large majority of physically handicapped individuals served by ES placement personnel have only relatively minor disabilities and, for practical purposes, are not truly handicapped (Bulletin VIII). ES placement services should be extended to persons with the relatively more severe disabilities.

5. There is some evidence (Bulletin VIII) that handicapped individuals are being placed on jobs for which they are overqualified. This apparent

---

underutilization of the physically handicapped worker's vocational capabilities should be viewed by the placement worker with serious concern.

6. The follow-up study of placement success (Bulletin III) reveals considerable expressed dissatisfaction with placement personnel on the part of physically handicapped individuals applying at ES. Furthermore, a significantly large proportion of the former ES applicants did not remember having received assistance from the agency. Regardless of whether or not factual basis exists for such dissatisfaction, it is important for placement personnel to be aware of such reactions on the part of the persons they serve. The value of the follow-up study in helping agency personnel improve the service they offer cannot be overemphasized.

7. The usefulness of the work history in understanding the work adjustment of the handicapped individual and in making predictions about his future success in the labor market has been indicated in several Bulletins (III, IV, VII, and VIII). In view of this, it becomes important for placement workers to devote more attention to the design of work history questionnaires and more care to the collection of work history data.
Implications for Research Workers

1. The survey of the research literature (Bulletin 1) reveals the disturbing fact that very few evaluation studies have been undertaken in the field of vocational rehabilitation. Even when evaluation studies are done, research design is often loose or entirely non-existent, in terms of such matters as control groups, selection of subjects, choice of variables and selection of data-collecting instruments. It is probably indicative of the relative recency of vocational rehabilitation research that the evaluation of outcomes has not received the necessary share of attention from researchers in the field.

2. Vocational rehabilitation research has been hampered by the failure of research workers to study the criteria with which they evaluate rehabilitation outcomes. The common practice of using single criteria tends to distort the true picture of success in rehabilitation. For example: use of employment status (being employed or not) as a criterion indicates a measure of success considerably higher than would be obtained were levels of employment used as part of the criterion (Bulletin III). While several different criteria have been used to evaluate rehabilitation outcomes, little attention has been given the problem of systematically studying possible inter-relationships among these criteria. Determination of the minimum set of criteria necessary to evaluate rehabilitation outcomes would be of obvious value to research workers in the field.

3. Two important variables in vocational rehabilitation research are occupation and disability. Research at IRC shows that findings tend to be specific to occupation and to disability. It is apparent that a frame of reference is necessary by which to define and describe occupational and disability populations. For the occupational variable, the Dictionary of Occupational Titles (D.O.T.) has provided a standard frame of reference for reporting research findings. No comparable frame of reference is available for the disability variable. Vocational rehabilitation research would be greatly benefited by a standard system for classifying disabilities, comparable to what has been done for occupations by the USES. Such a classification system of disabilities should indicate kind of disability as well as some measure of severity of disablement. The importance of severity of disablement as a research variable is indicated in findings reported in Bulletins IV and VIII.

---

*Leonard W. Mayo and Maya Riviere of the Association for the Aid of Crippled Children are currently working on the development of a system for coding disabilities, under a Special Project grant from OVR. Already developed are an Impairment and Etiology Code and Codes for Evaluation and Implementation of Service.*
4. In connection with occupational and disability variables, it is important to note that the classification of an individual's occupation and disability, based on information obtained by interview, is reliable only when a few gross major categories are used in the classification system. Finer, more detailed classification systems, i.e., systems using smaller category breakdowns, do not yield reliabilities adequate for research purposes.

5. A method for developing a measure of severity of disablement was suggested by the study of the relationships between counselee characteristics and measures of rehabilitation progress and outcomes (Bulletin IV). This measure, called the "index of ease of rehabilitation," is based on the premise that, other things being equal, the "easier" it is to rehabilitate a person, the less severe his disablement.

6. The necessity of clearly specifying populations and the danger of generalizing from one urban population to another adjoining population, even when these two populations lie within the same labor market area, is clearly demonstrated in Bulletins IV and VIII. This finding indicates the desirability of continued and expanded support for research on the local level (as opposed to research of nation-wide scope, which is often incorrectly assumed to be generalizable to the local situation.)

7. IRC research has invariably shown that personal history items (such as age, sex, marital status, number of dependents, education, and occupation) are significantly related to the work history patterns and employment success of physically handicapped individuals. This finding (concerning the significance of personal history items) helps justify the effort expended in collecting data on such items for agency records. What is regrettable is that these data have been put to little use beyond being incorporated as summary statistics in agency reports.

8. Procedures utilized in the state-wide survey of the physically handicapped in Minnesota (Bulletin VI) indicate the feasibility of similar surveys in other states.

9. The use of survey methods other than personal interview in undertaking surveys to identify physically handicapped individuals in the general population has shown results comparable to that obtained by the personal interview (Bulletin V). Considering that these methods (telephone interview, mail questionnaire) are much less expensive than the personal interview method, more use of such methods in population surveys is indicated, provided that only a small amount of information is desired from respondents.
THE APPLICATION OF RESEARCH RESULTS

10. Methodological studies reported in Bulletin V showed that personal data and employment information obtained by interview was generally valid in terms of comparison against agency records and information furnished by employers. However, significant differences in validity were obtained for different types of information. This finding underscores the need to determine the validity of information obtained by interview. Rapport with the interviewee is not sufficient grounds on which to base the validity of interview-obtained information.

As an interesting side-observation, it should be noted that interview information obtained from adult relatives of handicapped persons was found to be just as valid as information obtained from the handicapped persons themselves (Bulletin V). This finding, if verified by other investigators, should be of some consequence to researchers who rely primarily on the interview as their data-collecting method.

11. The relatively low cost of a carefully designed follow-up study (Bulletin III) should encourage researchers to make much more use of this research method than they have heretofore.

12. The utility of agency records in research has been demonstrated in Bulletins IV and VIII. It should be feasible to design these records in a form that is readily adaptable for use in research while at the same time serving their usual functions.

13. The research literature shows very little in the way of studies on work histories, specifically studies on the content and item-form of work history schedules or questionnaires. Bulletins III, IV, VII, and VIII indicate the importance of work histories as a source of hypotheses. For example: hypotheses concerning the relationship of age at disablement to the degree of severity of disablement for a given disability were derived from the rather limited work history schedule used in the follow-up study of placement success (Bulletin III). Methodological findings reported in Bulletin V add to the small pool of information available on the validity of specific work history items. Much more work is indicated in this methodological area.